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Methadone maintenance treatment in China: perceived challenges from the perspectives of service providers and patients

Fei Wu[1], Ching-Yi Peng[1], Haifeng Jiang[2], Ruimin Zhang[3], Min Zhao[2], Jianhua Li[3], Yih-Ing Hser[1]

[1]UCLA Integrated Substance Abuse Programs, 11075 Santa Monica Blvd, Suite 200, University of California, Los Angeles, CA 90025, USA
[2]Shanghai Mental Health Center, Shanghai Jiaotong University School of Medicine, Shanghai, China
[3]Yunnan Institute on Drug Abuse, Kunming, Yunnan, China
Address correspondence to F. Wu, E-mail: feiwu@ucla.edu

ABSTRACT

Background China has recently adopted methadone maintenance treatment (MMT) as a national strategy to address the problem of drug abuse and related public health issues such as HIV and HCV infections. However, low enrollment and retention rates suggest that barriers may exist in MMT utilization. This study examined both patients' perceptions and service providers' perceptions of challenges in MMT implementation in China.

Methods Four focus groups were conducted in two Chinese cities, Shanghai and Kunming, to explore the perceived and experienced barriers in MMT participation in China. All focus group discussions with participants were audio taped and transcribed. Atlas.ti 5.1 was used to analyze data.

Results Service providers and patient participants reported positive experiences (e.g. effects of MMT in curbing withdrawal symptoms) but also expressed concerns about side effects and continued heroin use during MMT. They also identified barriers in participating and remaining in MMT, including affordability (fee requirement), acceptability (methadone as a substitution, dose, long-term nature), accommodation and accessibility (inconvenient operation hours, lack of transferability to other MMT clinics during travel) and competition between public health and public security.

Conclusions The present findings have implications for reconsidering the current MMT policies and practices in order to improve access, utilization and, ultimately, the effectiveness of MMT in China.

Keywords methadone maintenance treatment, HIV prevention, community recovery, China

Introduction

Injection drug users (IDUs) are often at a high risk for HIV and/or HCV infections.[1] Approximately 740 000 people with HIV/AIDS are currently living in China, including 105 000 AIDS cases and 48 000 new HIV infections in 2009.[2] IDUs account for ~40% of all the HIV cases.[2,3] The HCV infection rate among Chinese IDUs was close to 70% reported in two recent meta-analyses.[4,5] Meanwhile, 13% of IDUs in China are infected with both HIV and HCV.[6] In response to the high rates of infectious diseases among IDUs, the Chinese government has recently authorized community-based methadone maintenance treatment (MMT) because a large body of international research has shown the efficacy of MMT in reducing illicit drug use and HIV/HCV risk behaviors (e.g. needle sharing and risky sexual contacts) among IDUs.[7–9] The first eight MMT trial

Fei Wu, Graduate Student Researcher
Ching-Yi Peng, Graduate Student Researcher
Haifeng Jiang, Psychiatrist in Residency
Ruimin Zhang, Deputy Director
Min Zhao, Deputy Director
Jianhua Li, Director
Yih-Ing Hser, Professor

sites were set up in China in 2004.[10] By the end of 2009, China had a total of 680 community MMT clinics in 27 of 34 provinces.[11]

Nonetheless, MMT in China faces many challenges, such as low enrollment and high drop out rates. Yin *et al.*[11] indicated that only around 240 000 individuals nationwide had ever enrolled in MMT clinics at the end of 2009, which was a very small portion of the 1.3 million drug users who are registered as addicts in the police database.[12] Recent evaluations of MMT in China[13,14] also pointed out that while drug users who stay in the treatment show significantly better results, such as decreases in relapse, lower rates of injection and needle sharing, and less engagement in unprotected sex, MMT clinics reported an average dropout rate at 50–70% at 3-month follow-up.[14,15] However, empirical research on factors impeding full MMT utilization in China remains scarce.[16] The purpose of this study was to identify and understand the barriers to MMT participation and retention in China to assist in future service improvement and thereby reduce injection drug use as well as HIV/HCV infection among IDUs.

Theoretical framework

This study adopted McCaughrin *et al.*'s[17] multidimensional model of health service access. It is particularly relevant for this study because the theory was developed based on clients in outpatient substance abuse treatment. The model specifies six domains for studying access to substance abuse treatment, including affordability (the cost of the treatment services in relation to the client's ability to pay), acceptability (client's and provider's view and opinion of treatment practices' acceptability, including their willingness to participate), accommodation (an agency's flexibility in adjusting certain operations, such as hours of operation, according to their client's abilities to access their services), availability (the amount and type of service available with regard to clients' needs such as service volume and format), service diversity (the comprehensiveness of related treatment services such as employment counseling) and competitive stance (an organization's ability to compete with other institutions for clients).

Methods

Qualitative methods are appropriate for exploring topics, phenomena or populations that have not been well studied.[18] Focus groups are an efficient technique to gather information on a topic from various participants via guided group conversations.[19] Four focus groups, two with patients and two with service providers, were convened in two Chinese cities, Shanghai and Kunming. Past research found low HIV (.066%) and HCV (51.8%) prevalence in Shanghai compared with those among IDUs from other parts of China.[20] However, Shanghai is reported to have recently witnessed an increasing number of drug users as well as HIV/HCV infections.[21] Kunming is the capital city of the Yunnan Province, which because of its long borders shared with the Golden Triangle, has more problems with drug trafficking and abuse than the rest of China. The prevalence rates of HIV and HCV infections among Yunan IDUs are 75 and 77%.

Procedures

MMT providers who currently work at Shanghai and Kunming MMT clinics were invited to participate via flyers posted in their offices. For prospective patient participants, recruitment flyers were posted in areas of the MMT clinics that are frequented by patients. The following table presents the demographic characteristics of study participants (Table 1):

Table 1 Characteristics of MMT patients and service providers, by site ($n = 39$)

	Patients ($n = 25$)		*Service providers ($n = 14$)*	
	Kunming ($n = 13$)	*Shanghai ($n = 12$)*	*Kunming ($n = 5$)*	*Shanghai ($n = 9$)*
Gender (%)				
Men	54	75	20	22
Women	46	25	80	78
Age (range)	34 (24–43)	41 (26–57)	42 (34–50)	40 (25–55)
Years of education (range)	12 (6–12)	11 (9–12)	15 (12–16)	16 (12–21)
Months in MMT (range)	23 (12–42)	15 (2–27)	—	—

The same semi-structured discussion guide was applied to all four focus groups. Discussion topics covered MMT enrollment procedures, routine practice, services received/provided, treatment effectiveness, what aspects of the current implementation had worked well and barriers to MMT participation and retention. The four focus groups were all conducted in private rooms at the Shanghai Mental Health Center and the Yunnan Institute on Drug Abuse to ensure privacy and confidentiality. A bilingual moderator and two bilingual research assistants were present at every focus group. Informed consents were obtained before each group session. Group discussions were conducted in Chinese cities within 2 h and were all audio taped. All procedures were approved by the University of California, Los Angeles (UCLA), Institutional Review Boards.

Analysis

Audio-recordings were transcribed into text files verbatim and then checked for accuracy and completedness. Complete Chinese transcripts were then translated into English. Two bilingual graduate researchers developed code lists independently based on the focus group topics. Then an iterative process was applied to add and refine emergent codes, which also explored themes and their relationships. Triangulation was applied in the process. A third researcher compared the consistency of codes and themes created by the two analysts. The comparison of the independently extracted themes demonstrated a high degree of agreement between the two analysts. Emerging themes were also validated by soliciting feedback on preliminary findings from the Chinese collaborators. Atlas.ti 5.1 was utilized for all the analyses.

Results

Affordability

The cost of daily methadone regardless of dosage is ¥10 RMB (~$1.5 USD). Many Kunming and Shanghai service providers at the focus groups believed that some patients dropped out MMT simply because they could not afford it.

> Taking methadone will cost each patient ¥300 RMB a month. The government [social security] only helps with the basics, like food. There is no support for [drug] treatment. Under these circumstances, [patients] can get really frustrated. Meanwhile, many jobs will not employ people who have a drug abuse history because they think drug users are not reliable. Without a job, patients have no economic or social status and are more likely to relapse.

Acceptability

Several patients noticed physical reactions and expressed concern about the side effects of methadone reflecting a lack of knowledge of methadone among MMT patients:

> I only started [methadone] treatment a bit more than two months ago. I'm just wondering if it has any influence on my physical health. I feel a burning sensation inside after taking it.

There is also a lack of understanding of MMT. Methadone's addictive nature was a major concern for MMT patients. The common belief is that methadone is as addictive as heroin, or even worse. All patient participants expressed their reluctance to become methadone addicted and described their dedication and efforts to quit methadone. Comments from a female respondent represent the popular opinion and practices among patients in the treatment:

> When I just started [methadone treatment], I did 80 ml. Now I do 20 ml. You can try if this works. Don't reduce by 10 ml. Reduce 5 ml every time. 80 ml to 75 ml, then to 70 ml. Like this. It's winter now. You can't do it now. Wait until summer and start to reduce 5 ml. Drug users are afraid of cold weather. [Facilitator: did you make the adjustment decision on your own?] I made the decision. The doctor did not agree. But I can't let methadone get me for the rest of my life. I need to get rid of its control. I'm determined and I have the perseverance. Sure it feels a bit uncomfortable. But I can do it.

Both patients and service providers described the concurrent use of heroin and methadone as one other reason why patients do not accept methadone, relapse to heroin and drop out from MMT. A patient participant talked about how his psychological dependence was still bothering him and how he was still using heroin while on MMT.

> Methadone is definitely effective physically. But still there is a psychological dependence [on heroin]. For the two years I've been taking methadone, I've also used heroin. Physical dependence is one thing, psychological cravings are another. (I) just want to use heroin. They feel like two different things. Like I didn't touch drugs these days, but I think about it all the time.

Also according to a service provider from Kunming, they lost some of their patients to the police because of patients' use of heroin in addition to methadone:

> Some drug users may feel that it [methadone] is not as satisfying as heroin and it doesn't give the same 'high' sensations as heroin does. Some of them buy drugs

whenever they have some money at their disposal. Some others sell drugs when they run out money. Many of our MMT patients get rearrested right at the drug dealing scene.

Availability

Several provider participants indicated that there is no methadone dosage limit at the clinics and the providers try to give patients enough methadone:

> We encourage them [patients] to take enough [methadone] to curb their heroin withdrawal symptoms.

Accommodation

A few Shanghai patient participants considered MMT clinical routines too restrictive and inconvenient, particularly with regard to the limited operation hours and locations of service provision. For example, one Shanghai service provider indicated that MMT clinic operation hours were often in conflict with patients' working schedules because the clinic is open the same hours as a regular 9 to 5 job.

Smaller towns or rural areas in China often have limited or no MMT. Even between places where MMT clinics were present, the transfer process was not always smooth. The example below demonstrates the anxiety and practical difficulties a transfer patient might experience to stay clean from heroin while traveling.

> I tried it once [to transfer from one locality to another], last time I needed to go to Guangzhou (a province of China). So I talked to my doctor in advance and he said he sent my profile over [to Guangzhou]. But after I arrived, my profile was still not there. I was so anxious. The doctor there asked me to wait there until 4pm and see if the profile arrives. I said no. If I can't get methadone there, I'll have to go find heroin. I can get it, but I don't want to. So I flew back to Shanghai immediately. After I got back to Shanghai, I received a phone call [from Guangzhou MMT] saying that I could go and get methadone at 4pm. But it was impossible for me to fly over again on that day.

Service diversity

Several service provider participants pointed out the importance of incorporating other related psychosocial interventions in the future, in addition to MMT:

> Behavioral therapy and employment counseling or occupational skill training are the most useful for them. For drug users in MMT, there should also be behavioral therapy for relapse prevention, medical care for their existing conditions, as well as occupational skill training so they can get a job and get really integrated to the community, which means they will be less likely to use illicit drugs, commit crimes, or spread HIV/HCV.

Competitive stance

In China, MMT providers are required to register their patients with the National Narcotics Control Board's central MMT database, which is shared between the public security and the public health systems. The police are entitled to request random urine tests for anyone they suspect. All patient participants from both localities expressed intense fear of being in the database and thus becoming targets of the police. It may lead to arrest, re-arrest and imprisonment for them. Both patient and service provider participants believed that police officials are required to satisfy arrest quotas and will act aggressively toward drug users, especially those registered with an MMT clinic. Below is an example given by a patient:

> When the police are trying to meet their quota, many [of us] get arrested ... I tested positive because I had my methadone. That's how I got arrested once. Then it was my doctor from my MMT clinic provided me with a witness saying that I did not use heroin so I got released. But I was so scared and I wanted to quit methadone treatment at the moment.

Service providers had to come up with strategies to recruit patients more actively.

> Although urine positive is one of the MMT admission criteria, patients would have no proof that they are in the process of getting MMT and can get arrested when the enrollment process just initiated. So there have been cases that patients got arrested during this waiting period . . . But if they have registration cards with us, there's a grace period of three to four days the police cannot arrest them even if their urine tests are positive. So I try to register patients the first day they come. To be safe, I give the physically healthier a dose that is 10 ml lower than the national average of 50 ml. For those with minor health conditions, I give out even lower doses so they can get registration cards on the first day to protect them from getting arrested.

Discussion

Main findings

First, the daily payment for methadone is a considerable financial burden for opioid users in recovery because the

majority of them do not have stable income. Second, there is a prevalent lack of understanding about side effects of methadone, harm reduction and methadone maintenance, and consequences of concurrent use of methadone and heroin. Third, MMT service providers are willing to prescribe a dosage high enough to curb heroin withdrawal symptoms, while their patients are trying to reduce methadone dose. Fourth, operation hours and locations of MMT clinics are inconvenient for patients. Finally, the fear of being targeted and thus arrested by the police is a main obstacle for drug users to access and remain in MMT.

What this study adds

There is a growing body of literature documenting the scaling up of MMT in China[10,22–26] signifying a completely new era of harm reduction for treating drug abuse and preventing HIV/HCV in the country. However, empirical examinations of this nation-wide effort remain limited.[27–30] This exploration of MMT in two Chinese cities from the service providers' as well as the patients' perspectives revealed both individual-level and structural-level barriers to MMT utilization.

Individual-level barriers: negative perceptions, beliefs, and experiences with MMT

The study has identified three individual-level contributors to MMT underutilization in China that reflect problems with MMT's acceptability among IDUs: (i) lack of knowledge of MMT side effects, (ii) concurrent use of heroin and methadone and (iii) unwillingness to utilize methadone treatment on a long-term basis, which is similar to previous Western literature on MMT.[31–33] While all three barriers require proper educational programs, the misconception about MMT is worthy of further contemplation since dosage was identified as a critical factor for MMT utilization by previous literature.[34,35] The issue may have a specific Chinese background that calls for special attention. Before the adoption of MMT in China, methadone had only been used in detoxification treatment, which first uses methadone to replace heroin, and then gradually reduces methadone dose until patients are completely abstinent from methadone too.[25] Many of the current MMT patients have a long history of drug abuse and might have had several episodes of methadone detoxification treatment and believe that they are supposed to gradually quit methadone instead of remaining in 'maintenance.' This may explain our finding that many MMT patients reduce their doses in the hope of finally quitting methadone.

Structural level barriers: organizational, community and policy level factors that impede a better MMT access

One major contribution of this study is the identification of structural-level barriers for heroin users to utilize MMT in the Chinese context: (i) the organizational barriers include problems of availability and accommodation, (ii) community-level barriers refer to issues in MMT service diversity and (iii) the policy-level barriers reflect challenges coming from affordability and competitive stances.

Availability (MMT dose and format) did not come up as a major issue since MMT service providers indicated that there is no dose limit on prescriptions and all MMT clinics follow the national MMT establishment and practice rules.[27] This study confirms previous research on China's MMT effort that documented its accommodation issues such as inflexible service hours, locations and affordability issues.[27] Scholars, practitioners and policy-makers need to conceptualize creative methods to deliver MMT and make it more accessible at different times, localities and at different costs for patients of different income levels. Our study also indicated the need for creating and incorporating other wrap-around services such as behavioral counseling and employment training.

Traditionally in China, the public security department had taken the lead in controlling drug abuse.[16] Harm reduction strategies, such as needle exchange programs and MMT are operated by the health department, and were only recently introduced into China.[16,30] Drug users who relapse to heroin use qualify for MMT enrollment according to the recruitment criteria; at the same time, they also meet the criteria for getting harsher punishment and could serve a longer term in the compulsory rehabilitation facilities.[16] This study also identified the competition between the traditional penal approach and the new public health approach as a major structural barrier to drug user's full utilization of MMT in China, which is documented in Lin *et al.*'s study[27] of MMT in China. In addition, this study discovered that health professionals at MMT clinics in China had started to develop strategies to compete with the police and enroll more patients, indicating the growth of the new approach and the workforce. However, we would recommend a clearer definition of jurisdictions between the two systems at the policy level and more effort from the public security side to acknowledge, accept and even incorporate the new harm reduction strategy in their routine law enforcement activities with drug users.

Future directions

Further studies in other localities of China are needed to see whether the results of this study are also applicable

elsewhere. Since this study identified several structural-level barriers to MMT utilization in China, future endeavors should also include policy-makers from government sectors to explore realistic resolutions to remove these structural barriers.

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